

(37 C.F.R. 1.56, 1.97, and 1.98)

SHEET 1 OF 7

ATTORNEY DOCKET NO:
26767-1000

APPLICATION NO:
09/375,169

APPLICANTS: C. Aita et al.

FILING DATE:
August 16, 1999

GROUP: 1775

U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

† EX'R INITIAL	* REF. #	PATENT NUMBER	DATE (MO/YR)	COUNTRY	TRANSLATION (YES/NO)

OTHER DOCUMENTS

† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)

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INFORMATION DISCLOSURE STATEMENT

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SHEET 2 OF 7

ATTORNEY DOCKET NO:
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APPLICATION NO:
09/375,169









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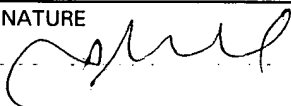
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OTHER DOCUMENTS

† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)
	CA	H.E. Kambic, 'Changing strategies for biomaterials and biotechnology', in <i>Biomaterials' Mechanical Properties, ASTM STP 1173</i> (edited by H.E. Kambic and A.T. Yokobori, Jr., American Society for Testing Materials, Philadelphia, PA, 1994) pp. 293-301.
	CB	O.F. Bertrand, R. Mongrain, J. Rodes, J.C. Tardif, L. Bilodeau, G. Cote, and M. Bourassa, 'Biocompatibility aspects of new stent technology', <i>Journal of the American College of Cardiology</i> 32 , 562-571 (1998).
	CC	B. Kasemo and J. Lausmaa, 'Surface properties and process of the biomaterial-tissue interface', <i>Materials Science and Engineering CI</i> , 115-119 (1994).
	CD	S.H. Teoh, S.C. Lim, E.T. Yoon, and K.S. Goh, 'A new method for <i>in-vitro</i> wear assessment of materials used in mechanical heart valves', in <i>Biomaterials' Mechanical Properties, ASTM STP 1173</i> (Edited by H.E. Kambic and A.T. Yakabori, Jr., American Society for Testing and Materials, Philadelphia, PA 1994) pp. 43-52.
	CE	R. Hauert, U. Müller, G. Francz, F. Birchler, A. Schroeder, J. Mayer, and E. Wintermantel, 'Surface analysis and bioreactions of F and Si containnig a-C:H', <i>Thin Solid Films</i> 308-309 , 191-194 (1997).
	CF	M. Shirkhanzadeh, 'Nanoporous alkoxy-derived titanium oxide coating: a reactive overlayer for functionalizing titanium surface', <i>Journal of Materials Science: Materials in Medicine</i> 9 , 355-362 (1998).
	CG	M. Amon, A. Bölz, and M. Schaldach, 'Improvement of stenting therapy with a silicon carbide coated tantalum stent', <i>Journal of Materials Science: Materials in Medicine</i> 7 , 273-278 (1996).
	CH	L.D. Piveteau, M.J. Girona, L. Schlapbach, P. Barboux, J.P. Bailot, and B. Gasser, 'Thin films of calcium phosphate and titanium dioxide by a sol-gel route: a new method for coating medical implants', <i>Journal of Materials Science: Materials in Medicine</i> 10 , 161-167 (1999).

EXAMINER'S SIGNATURE

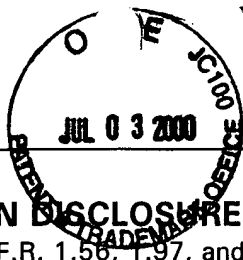


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SHEET 3 OF 7

ATTORNEY DOCKET NO:
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APPLICATION NO:
09/375,669

APPLICANTS: C. Aita et al.

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GROUP: 775

OTHER DOCUMENTS

† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)
	CI	N. Maalej, R. Albrecht, and J. Loscalzo, 'The potent platelet inhibitory effects of S-nitrosated albumin coating of artificial surfaces', <i>Journal of the American College of Cardiology</i> , 33 , 1408-1414 (1999).
	CJ	A. Krajewski, A. Ravaglioli, and M. Mazzocchi, 'Coating of ZrO ₂ supports with a biological glass', <i>Journal of Materials Science: Materials in Medicine</i> 9 , 309-316 (1998).
	CK	Y.H. Yun, V.T. Turitto, K.P. Diagle, P. Kovacs, J.A. Davidson, and S.M. Slack, 'Initial hemocompatibility studies of titanium and zirconium alloys: Prekallikrein activation, fibrinogen absorption, and their correlation with surface electrochemical properties', <i>Journal of Biomedical Materials Research</i> 32 , 77-85 (1996).
	CL	H. Gleiter, 'Materials with ultrafine microstructures: retrospectives and perspectives', <i>Nanostructured Materials</i> 1 , 1-19 (1992).
	CM	D.F. Green, R.H.J. Hannink, and M.V. Swain, 'Transformation Toughening of Ceramics', (CRC Press, Inc., Boca Raton, FL 1989) pp. 1-15.
	CN	G. Skandan, C.M. Foster, H. Frase, M.N. Ali, J.C. Parker, and H. Hahn, 'Phase characterization and stabilization due to grain size effects of nanostructured Y ₂ O ₃ ', <i>Nanostructured Materials</i> 1 , 313-322 (1992).
	CO	G.S. Was and T. Foecke, 'Deformation and fracture in microlaminates', <i>Thin Solid Films</i> , 286 , 1-31 (1996).
	CP	R. Lappalainen and R. Raj, 'Nanograin superplasticity', in <i>Microcomposites and Nanophase Materials</i> (edited by D.C. Van Aken, G.S. Was and A.K. Ghosh, TMS, Warrendale, PA, 1991) pp. 41-51.
	CQ	H. Hahn, 'Microstructure and properties of nanostructured oxides', <i>Nanostructured Materials</i> 2 , 251-265 (1993).
	CR	H. Hahn and R.S. Averback, 'High temperature mechanical properties of nanostructured ceramics', <i>Nanostructured Materials</i> 1 , 95-100 (1992).

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SHEET 4 OF 8

ATTORNEY DOCKET NO:
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APPLICANTS: C. Aita et al.

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OTHER DOCUMENTS

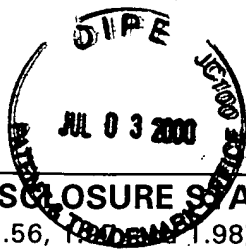
† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)
	CS	F.A. Modine, D. Lubben, and J.B. Bates, 'Electrical conduction in CaF_2 and $\text{CaF}_2\text{-Al}_2\text{O}_3$ nanocomposite films on Al_2O_3 substrates', <i>Journal of Applied Physics</i> 74 , 2658-2664 (1993).
	CT	A.H.M. Zahirul, Y. Alam, Y. Takashima, K. Sasaki, and T. Hata, 'Properties of indium tin oxide films with indium tin modulation layers prepared by nano-scale controlled reactive magnetron sputtering', <i>Thin Solid Films</i> 279 , 131-134 (1996).
	CU	T. Hirano, K. Izaki, and K. Niihara, 'Microstructure and thermal conductivity of $\text{Si}_3\text{N}_4/\text{SiC}$ nanocomposites fabricated from amorphous Si-C-N precursor powders', <i>Nanostructured Materials</i> 5 , 809-818 (1995).
	CV	Z. Peng, X. Li, M. Zhao, H. Cai, S. Zhao, G. Hu, and B. Xu, 'Fabrication of $\text{La}_{1-x}\text{Sr}_x\text{Fe}_{1-y}\text{Co}_y\text{O}_3$ sensitive ceramics, nanocrystalline thin films and the manufacture of NCTF-OSFET gas sensing device', <i>Thin Solid Films</i> 286 , 270-273 (1996).
	CW	C.R. Aita and W.S. Tait, 'Nanocrystalline aluminum nitride: Growth by sputter deposition, optical absorption, and corrosion protection behavior', <i>Nanostructured Materials</i> 1 , 269-282 (1992).
	CX	W.S. Tait and C.R. Aita, 'Modeling corrosion behavior of aluminum- and aluminum nitride-coated steel in oxygen-free aqueous potassium chloride', <i>Corrosion</i> 46 , 115-117 (1990).
	CY	W.S. Tait and C.R. Aita, 'Aluminum nitride as a corrosion protection coating for steel: the self-sealing porous electrode model', <i>Surface Engineering</i> 7 , 327-330 (1991).
	CZ	C.M. Scanlan, M. Gajdardziska-Josifovska, and C.R. Aita, 'Tetragonal zirconia growth by nanolaminate formation', <i>Applied Physics Letters</i> 64 , 3548-3550 (1994).

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APPLICANTS: C. Aita et al.

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GROUP: 775

SHEET 5 OF 7

OTHER DOCUMENTS

† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)
	C1	C.R. Aita, M.D. Wiggins, R. Whig, C.M. Scanlon, and M. Gajdardziska-Josifovska, 'Thermodynamics of tetragonal zirconia formation in a nanolaminate film', <i>Journal of Applied Physics</i> 79 , 1176-1178 (1996).
	C2	M. Schofield, C.R. Aita, P.M. Rice, and M. Gajdardziska-Josifovska, 'Transmission electron microscopy study of zirconia-alumina nanolaminates grown by reactive sputter deposition I: Zirconia nanocrystallite growth morphology', <i>Thin Solid Films</i> 326 , 106-116 (1998).
	C3	C.R. Aita, 'Reactive sputter deposition of ceramic oxide nanolaminates: Zirconia-alumina and zirconia-yttria model systems', <i>Surface Engineering</i> 14 , 421-426 (1998).
	C4	M. Gajdardziska-Josifovska and C.R. Aita, 'The transformation structure of zirconia-alumina nanolaminates studied by high resolution electron microscopy', <i>Journal of Applied Physics</i> 79 , 1315-1319 (1996).
	C5	M. Schofield, C.R. Aita, P.M. Rice, and M. Gajdardziska-Josifovska, 'Transmission electron microscopy study of zirconia-alumina nanolaminates grown by reactive sputter deposition. Part I: zirconia nanocrystallite growth morphology', <i>Thin Solid Films</i> 326 , 117-125 (1998).
	C6	R. Ruh, R., K.S. Mazdiasni, P.G. Valentine, and H.O. Bielstein, 'Phase relations In the system ZrO_2 - Y_2O_3 at low Y_2O_3 contents', <i>Journal of the American Ceramic Society</i> 67 , C190-C192 (1984).
	C7	M.H. Tuilier, J. Dexpert-Ghys, H. Dexpert, and P. Lagarde, 'X-Ray absorption study of the ZrO_2 - Y_2O_3 system', <i>Journal of Solid-State Chemistry</i> 69 , C153-C161 (1987).
	C8	C.Pascaul and P. Duran, 'Subsolidus Phase Equilibria and Ordering in the System ZrO_2 - Y_2O_3 ', <i>Journal of the American Ceramic Society</i> 66 , 23-27 (1982).
	C9	H.G. Scott, 'Phase relationships in the yttria-rich part of the yttria-zirconia system', <i>Journal of Materials Science</i> 12 , 311-316 (1977).
	C10	H.G Scott, 'The yttria-zirconia δ phase', <i>Acta Crystallographica</i> B33 , 281-282 (1977).
	C11	R.W. Lynch and B. Morosin, 'Thermal expansion, compressibility, and polymorphism in hafium and zirconium titanates', <i>Journal of the American Ceramics Society</i> 55 , 409-413 (1972).

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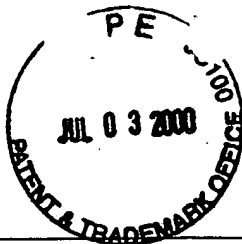
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SHEET 6 OF 7

ATTORNEY DOCKET NO:
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APPLICATION NO:
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APPLICANTS: C. Aita et al.

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OTHER DOCUMENTS

† EX'R INITIAL	* REF. #	CITATION (Author, Article Title, Journal/Book Title, Date, Pertinent Pages, etc.)
	C12	A.E. McHale and R.S. Roth, 'Low-temperature phase relationships in the system ZrO_2-TiO_2 ', <i>Journal of the American Ceramics Society</i> 69 , 827-832 (1986).
	C13	J.D. DeLoach and C.R. Aita, 'Phase evolution in sputter deposited zirconia-titania nan laminate films', <i>Journal of Vacuum Science and Technology A</i> , in review (1999).
	C14	J.D. DeLoach and C.R. Aita, 'High refractive index <100> textured cubic zirconia formed in nanolaminates using titania interruption layers', <i>Journal of Materials Science Letters</i> , in review (1999).
	C15	W. Ensinger, 'The influence of ion irradiation during film growth on the chemical stability of film/substrate systems', <i>Surface and Coatings Technology</i> 80 , 35-48 (1996).
	C16	P.J. Martin, R.P. Netterfield, W.G. Sainty, and C.G. Pacey, 'The preparation and characterization of optical thin films produced by ion-assisted deposition', <i>Journal of Vacuum Science and Technology A</i> 2 , 341-345 (1984).
	C17	L. van Leaven, M.N. Alias, and R. Brown, 'Corrosion behavior of ion plated and implanted films', <i>Surface and Coatings Technology</i> 53 , 25-34 (1992).
	C18	R. Hübler, A. Schroer, W. Ensinger, G.K. Wolf, W.H. Schreiner, and I.J.R. Baumvol, 'Plasma and ion-beam-assisted deposition of multilayers for tribological and corrosion protection', <i>Surface and Coatings Technology</i> 60 , 561-565 (1993).
	C19	H. Kupfer, F. Richter, S. Friedrich, and H.J. Spies, 'Deposition and properties of Ti/N carbon multilayers for corrosion protection of steel', <i>Surface and Coatings Technology</i> 74-75 , 333-338 (1995).
	C20	U. Wiklund, P. Hedenquist, S. Hogmark, B. Stridh, and M. Arbell, 'Multilayer coatings as corrosion protection of zircaloy', <i>Surface and Coatings Technology</i> 86/87 , 530-534 (1996).
	C21	M. Pourbaix, 'Electromechanical corrosion of metallic biomaterials', <i>Biomaterials</i> 5 , 122-134, 1984.

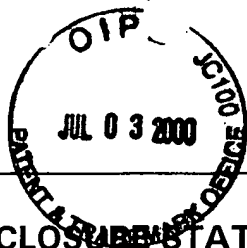
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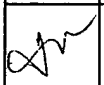
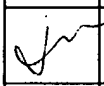
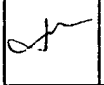
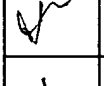
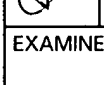
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	C22	A. Giaimo, M.N. Alias, and R. Brown, in 'Metallic nitrides for corrosion protection in marine environments: Theory compared to experimental results', in <i>Proceedings of Corrosion/97</i> (NACE International, Houston, TX, 1997) 418/1-418/12.
	C23	L.L. Hench and E.C. Ethridge, <i>Biomaterials: An Interfacial Approach</i> (Academic, New York, NTY 1992), Ch. 5.
	C24	W.S Tait, C.O. Huber, B.C. Begnoche, J.R. Siettmann, and C.R. Aita, 'Al, Al-N alloy, and AlN-coated steel corrosion behavior in O ₂ -free KCl solutions', <i>Journal of Vacuum Science and Technology A</i> 6, 924-927 (1988).
	C25	O. Kubaschewski and C.B. Alcock, <i>Metallurgical Thermochemistry</i> , (Pergamon, Oxford, UK, 1979) p.268.
	C26	C.R. Aita, 'Tailored ceramic film growth at low temperature by reactive sputter deposition', <i>Critical Reviews in Solid State and Materials Sciences</i> 23, 205-274 (1998).

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